

MARY TAYLOR HUBER, PAT HUTCHINGS,
RICHARD GALE, ROSS MILLER, AND MOLLY BREEN

Leading Initiatives for

DEVELOPING THE ABILITY to make, recognize, and evaluate connections among disparate concepts, fields, or contexts is what integrative learning is all about. Breadth and depth of learning remain hallmarks of a quality liberal education. Yet, today, there's a growing consensus that breadth and depth are not enough.

As Carol Geary Schneider, president of the Association of American Colleges and Universities (AAC&U), argues, educators are

taking seriously the fragmentation of knowledge, not just in [their] courses, but through the knowledge explosion in the world around us. Many of the most interesting educational innovations clearly are intended to teach students what we might call the new liberal art of integration. Not only do these innovations invite students to integrate learning from

different sources,

but they also provide models, frameworks, and practice in actually doing so. (2004, 7) To be sure, there's a sense in which all learning is integrative, if only because new ideas must somehow connect to prior ones. When educators single out integrative learning for special attention, however, they are usually talking about larger leaps of imagination—about linking ideas and domains that are not easily or typically connected. As a student in a mathematics and English learning community at the College of San Mateo observed, integrative learning means "tying things together that don't seem obvious."

How to help students tie things together is the challenge. Most theories of intellectual development construe the ability to integrate knowledge as a relatively sophisticated skill, which develops over time and requires considerable effort and experience to attain. For example, Benjamin Bloom (1956) placed

The higher education community is gaining significant experience in fostering integrative learning

synthesis near the "top" of his *Taxonomy of Educational Objectives*, and William Perry (1998) thought that the capacity for synthesis develops as students progress through varieties of dualism (in which knowledge is basically right or wrong) and relativism (in which a number of legitimate ways of seeing the world are recognized) to arrive, if they do, at commitment in the face of uncertainty. Details of particular typologies aside, it appears that students need multiple opportunities to understand and to practice the "integrative arts" throughout their college years.

Strengthening integrative learning, then, involves broad-based campus change. Although the integrative arts can (and should) be taught within particular courses, departments, and institutional divisions, they cannot by their very nature be pursued alone. The most promising initiatives for integrative learning are about finding strategic points of connection, threading attention to integrative learning throughout (and between) an institution's various programs, and encouraging and scaffolding students' own efforts to connect the parts.

Fostering integrative learning

Fortunately, the higher education community is gaining significant experience in fostering integrative learning through changes in curricula, pedagogy, assessment, and faculty development. Consider, if you will, the experience of the institutions that participated in the national Integrative Learning Project (ILP), sponsored by AAC&U and the Carnegie Foundation for the Advancement of Teaching. Aimed at promoting integrative learning in undergraduate education, this three-year project worked with ten campuses to develop and assess advanced models and strategies to foster students' abilities to integrate their learning over time. We reported extensively on work in progress in *Peer Review* (summer/fall 2005), and have now had time to step back and reflect on the work campus by campus and across settings in our online public report (www.carnegiefoundation.org/e-library/integrativelearning).

MARY TAYLOR HUBER is senior scholar, PAT HUTCHINGS is vice president, RICHARD GALE is senior scholar, and MOLLY BREEN is program associate, all at the Carnegie Foundation for the Advancement of Teaching. ROSS MILLER is director of programs in the Office of Quality, Curriculum, and Assessment at AAC&U.

Integrative Learning



University of
California,
Santa Barbara

New York
University



Curriculum. The curriculum is an obvious starting point for questions about opportunities for synthesis: Where and when are students asked to put the pieces together in order to better understand or solve important problems? Where and when are students encouraged to make links among their academic, personal, and community lives? To be sure, many students already get opportunities for synthesis in some of their courses, and in “enriching educational experiences” (see the National Survey of Student Engagement) such as community service or volunteer work, lively interdisciplinary programs and centers, or those honors programs and learning communities that are accompanied by special attention to academic advising, cocurricular activities, and other student services.

While these kinds of courses, enrichment experiences, and special programs increase the chance that students will receive encouragement and guidance for integrative learning, many colleges and universities are trying to be more intentional about building links into the regular curriculum and creating opportunities for all students to integrate their learning at multiple points throughout their college careers. For example, ILP campuses have focused energy on key areas for curriculum integration. These include extended core curricula; cross-disciplinary learning communities; cross-cutting skills, literacies, and learning outcomes; first-year initiatives; middle-year initiatives; efforts to connect professional programs with general education; and efforts to connect study abroad programs with curricula.

Pedagogy. In the drive to help students develop integrative habits of mind, it is important to remember that the effectiveness of curricular innovations depends on the pedagogies that support them. Many familiar pedagogies can serve the goal of integrative learning. Indeed, just about any format that allows groups of students to turn their attention to common problems, issues, themes, or tasks—the seminar, for example—can prompt integrative learning, if the topic is of sufficient scope and interest to be elucidated by insights from different disciplines and perspectives. Experiential strategies, like service learning, study abroad, or internships, invite students to make connections between coursework and community, theory and practice. Innovative approaches using new media can relate objects or texts to contexts, and enable creative simulations. And there are emergent pedagogies, which respond to unanticipated events (like 9/11), student interests, and other concerns.

All of these pedagogies share certain qualities. They acknowledge the realities of a changing world where disciplinary and curricular isolation are neither feasible nor desirable. They require (and develop) intellectual dexterity on the part of both the teacher and the student, as well as the ability to speak to, if not from, a broad spectrum of knowledge and experience. They also embrace a commitment to creating time and space for dialogue and conflict. As a result, these pedagogies necessitate a more flexible approach to assessment, with well-designed assignments throughout the course, and multiple opportunities for structured reflection to help students take a more intentional approach to their own learning. Several ILP campuses are experimenting with the use of electronic portfolios as a way for students to integrate their own learning, and two (La Guardia and Portland State) have been national leaders in the e-portfolio movement.

What is needed in teaching for integration, above any particular pedagogy, is an intentional approach. This means, first, designing courses with integrative learning in mind, and second, asking questions and gathering evidence about the specific challenges and dilemmas that students are facing as they develop their capacities as integrative learners. (See, for example, reports by the 2005 cohort of Carnegie Scholars in the Carnegie Academy for the Scholarship of Teaching and Learning.)

What is needed in teaching for integration, above any particular pedagogy, is an intentional approach

But it also requires paying close attention—as the ILP campuses are doing—to integrative learning when taking up issues of curricular alignment, program and campus-level assessment, and faculty

development. If integrative learning is only as good as the pedagogy that supports it, then integrative teaching will only be as successful as the arrangements that make it possible and make it work.

Assessment. Assessment is a particular challenge for integrative learning—as it is, we might add, for other liberal education goals. Although assessment practices in higher education have advanced over the past two decades, neither standardized tests (such as ACT's Collegiate Assessment of Academic Proficiency or ETS's Measure of Academic Proficiency and Progress) nor surveys of student opinion (like the National Survey of Student Engagement) directly assess students' integrative work. While some of the exercises used for the Collegiate Learning Assessment (a standardized qualitative exam) may require integrative action, the test provides scores only for critical thinking, analytical reasoning, and written communication.

ILP participants have, over the past several years, developed a collection of innovative practices to assess—and foster—integrative learning. Given that integrative learning can be defined in a wide variety of ways, it is no surprise that these locally invented assignments and assessments vary according to each campus's learning needs. One prime advantage of locally developed assignments and assessments is the enhanced likelihood that teaching and instruction will be aligned intentionally to produce quality learning and that the assessments will have good validity.

Valid assessment can arise from careful consideration of the whole planning-teaching-learning-assessment feedback cycle. Validity depends upon asking students to complete a task very similar to the experiences they had leading up to the assessment. Those experiences most often are class assignments. Assignments should logically flow from the goals set for student learning and allow sufficient time and opportunity to learn. Goals depend upon the definition of the outcome: complex outcomes such as integrative learning, while

often difficult to define in words, can also be defined operationally—that is, by what one does when engaged in the outcome. So, by this logic, an assignment can represent nearly all of the learning cy-

cle—operationally defining the outcome, advancing learning toward goals established for the outcome, producing material for formative and summative assessment, and generating data to improve future teaching and learning. Indeed, because assignments can and should be seen as a powerful (if underappreciated) kind of assessment, the ten ILP campuses have begun to see assignment design as an especially promising site for work by faculty, departments, and programs concerned with integrative learning.

Faculty Development. With so much riding on pedagogy and classroom-based assessment, campuses seriously committed to integrative learning are putting in place not only relevant experiences for students, but also opportunities for faculty to develop the capacity for—and a community around—integrative teaching. Indeed, there are already many routes to this end. On a growing number of campuses, centers for teaching and learning offer workshops on classroom approaches that promote connection making, such as collaborative learning, problem-based learning, service learning, and the like. But serious commitment to integrative learning for students requires something that goes beyond what is usually meant by faculty development, and involves efforts to create a campus culture where a larger part of the academic community (faculty, staff, and students) are engaged in common integrative work.

Opportunities for faculty to develop more integrative approaches can be found in work on curriculum. On many campuses, general education reform brings the community together for tough but powerful conversations about the goals of undergraduate education and how students' experiences should (but often do not) add up. Working together on key moments of the curriculum (for example, freshman year at the College of San Mateo) provides more focused opportunities for goal setting and design, while convening people to consider the effects of the curriculum can provide valuable occasions to examine student work (for example, examining sophomore

writing portfolios at Carleton College). Special efforts, like the State University of New York College at Oswego's Catalyst Project, which explores students' perceptions of learning from freshman orientation to senior year, can also provide grist for lively discussion among faculty about how students integrate their experiences over time and what new interventions could strengthen those experiences.

Of course, integration is not simply a matter of capacity. One may have the skills and know-how to connect ideas but not the inclination. In this sense, integration is also a matter of culture and values, and both students and faculty are more likely to embrace integrative thinking if the campus is a place where one finds a lively exchange about big ideas and issues that people care about—topics that call on people to contribute different perspectives and bring their varied expertise and experience to bear in ways that create new understandings.

Lessons for leadership

As the participants in the Integrative Learning Project can attest, a great deal can happen (and fail to happen) in three years. On the one hand, three years feels scarcely long enough to identify leadership and establish the momentum necessary for lasting change. On the other hand, three years is more than sufficient to encounter the full array of obstacles to campus change: departure of key faculty, shifting administrative priorities, or declining funds, to mention just a few.

In light of these stubborn facts, what lessons can we draw about leading campus change? How can we best make sense of the complex relationships between intention, practice, and result that played out on each of the ten participating campuses as they worked to create more and better opportunities for students to put together the various pieces of their undergraduate experience?

Make integrative learning a campus-wide concern. Individual faculty members can do much to strengthen integrative learning through decisions about course design, pedagogy, and assignments. But individual efforts, by themselves, cannot create and sustain the opportunities students need to develop as integrative thinkers over the full arc of their college careers. For this to happen, collaborative efforts at the campus, program, and departmental levels are needed, both to introduce new practices where necessary, and to

ABOUT THE PROJECT

Through the Integrative Learning Project: Opportunities to Connect, the Carnegie Foundation for the Advancement of Teaching and the Association of American Colleges and Universities worked with the following campuses to develop and assess advanced models and strategies to help students pursue learning in more intentional, connected ways:

- Carleton College
- College of San Mateo
- LaGuardia Community College CUNY
- Massachusetts College of Liberal Arts
- Michigan State University
- Philadelphia University
- Portland State University
- Salve Regina University
- State University of New York College at Oswego
- University of Charleston

Additional information is available online at www.aacu.org/integrative_learning.

The project's public report is available online at www.carnegiefoundation.org/elibrary/integrativelearning.

ensure that programs already in place reinforce and build on one another. It may be necessary to start with a small group of colleagues in a relatively modest way, while keeping one's eyes open for larger opportunities. Articulating a vision that connects integrative learning to important institutional goals can attract people from different walks of campus life and can help a campus obtain "buy-in," create alliances, and marshal resources for successful initiatives.

Design initiatives strategically. There are many ways to strengthen the integrative potential of the undergraduate experience, from approaches that focus on the structure of the curriculum to those that give students the tools to connect their academic learning with their lives. Which ones make the most sense for any particular institution depends on what is already happening there, as well as on the strength of campus commitment to integrative learning as an educational goal. Finding out where and when integrative learning is (and is not) currently taking place can help identify strategic sites for new initiatives, reveal points of overlap to nurture, and discover gaps to fill. Examining successful work in these areas at your own or another institution can provide "existence proofs" and design principles for your own initiatives.

Support faculty creatively. Most educators are intrigued by the concept of integrative learning but have different ideas about what integrative learning means, how it develops, and what it looks like in practice. Establishing more and better occasions to talk about integrative learning can help educators develop a more widely shared understanding about its nature, varieties, and value, and about how, when, and where it can best be fostered. Such discussions can be particularly productive when grounded in a common text or project that involves analyzing actual student work. But there should also be a sustained, connected set of faculty development experiences to build the necessary level of skills, commitment, and community. Faculty should, of course, be recognized and rewarded for this work.

Make a commitment to knowledge building. Integrative learning initiatives should be accompanied by a commitment to inquiry that can first build knowledge about the depth of student learning that results (or does not) from participation in integrative opportunities, and then suggest what aspects of the curriculum, cocurriculum, course design, and pedagogy foster and improve students' capacities for integration. This means asking interesting and important questions at each site where reform takes place; gathering and exploring evidence; trying out and refining the new insights that have been gained from this process; and finding ways to make results public so that they can inform and inspire further work. Keep in mind that when assessment instruments, such as assignments or surveys, are well designed, they can serve as pedagogical tools as well.

Recognize that institutionalization is a long-term process. Strengthening integrative learning on campus is a long-term process, that requires leadership, creativity, and flexibility on the part of everyone involved. To sustain the work, leaders should think of themselves as teachers, working with others to transform their understandings, their commitments, their beliefs, and their skepticism. It is important to create opportunities for people new to the initiative to get involved. And, to maintain momentum, it helps to focus on the goal—integrative learning—rather than the parameters of any particular initiative. If one design runs up against bureaucratic, political, or financial roadblocks, it may be possible

to create new ones that skirt the problems, while allowing time for a solution to be found.

Build networks beyond campus for collaboration and exchange. An important lesson from the Integrative Learning Project is that campus efforts are strengthened by working with other campuses, sharing discoveries about integrative learning, developing new ideas about assessment, and learning from each other's designs. Local efforts can be reinvigorated through participation in a community of educators working toward similar goals, and that community, in turn, can contribute to building knowledge that can inform efforts to foster integrative learning at other colleges and universities. Securing support from external donors and associations can bring resources and recognition that can enhance the status and visibility of integrative learning initiatives on campus.

Prospects

This is a promising moment for advocates of integrative learning. With all six regional and four major specialized accreditors calling for some form of integrative learning as an outcome of college, what has long been an aspiration for undergraduate education is now a common expectation. Campuses are discussing not whether integrative learning will be part of undergraduate learning, but rather how it will be defined, fostered, supported, and assessed. It is our hope that institutions will find models, tools, object lessons, and inspiration from participants in the Integrative Learning Project. But their work is not over. Like everyone else, individuals on these campuses plan to continue to enlarge and strengthen opportunities for integrative learning in the years ahead, and continue to welcome the company of fellow travelers along the way. □

REFERENCES

- Bloom, B. S., and collaborators. 1956. *The taxonomy of educational objectives: Cognitive domain*. New York: David McKay.
- Perry, W. G. 1998. *Forms of ethical and intellectual development in the college years: A scheme*. San Francisco: Jossey-Bass.
- Schneider, C. G. 2004. Changing practices in liberal education: What future faculty need to know. *Peer Review* 6 (3): 4–7.